Claims 1-67 (Cancelled)

Base SEE (Macroscopic)

68. (New) An apparatus for obtaining information for a structure, comprising:

a lens arrangement which is configured to provide there through electro-magnetic radiation; and

a dispersive arrangement configured to receive at least one portion of the electro-magnetic radiation and forward a dispersed radiation thereof to at least one section of the structure on a macroscopic scale.

69. (New) The apparatus according to claim 68, wherein the electro-magnetic radiation is provided by at least one of a broadband source or a wavelength tuned source.

70. (New) The apparatus according to claim 68, wherein the dispersive arrangement contains at least one of a diffractive element or a refractive element.

71. (New) The apparatus according to claim 70, wherein the dispersive element is at least one of a fiber grating, a blazed grating, a binary, prism or a holographic lens grating.

72. (New) The apparatus according to claim 68, wherein the lens arrangement contains at least one of a gradient index lens, a reflective mirror lens grating combination or a diffractive lens.

73. (New) The apparatus according to claim 68, further comprising an optical waveguide configured to transmit and receive the information from the structure on a macroscopic scale

74. (New) The apparatus according to claim 72, wherein the optical waveguide is an optical fiber.

75. (New) The apparatus according to claim 74, wherein the information is at least one of a two-dimensional image or a three dimensional image.

76. (New) The apparatus according to claim 75, wherein the at least one of the two-dimensional image or the three-dimensional image contains from about 300,000 to 1,000,000 resolvable points.

77. (New) The apparatus according to claim 75, wherein the at least one of the two-dimensional image or the three-dimensional image contains from about 150,000 to 300,000 resolvable points.

78. (New) The apparatus according to claim 75, wherein the at least one of the two-dimensional image or the three-dimensional image contains from about 100,000 to 150,000 resolvable points.

79. (New) The apparatus according to claim 68, wherein the apparatus is a probe having a diameter of less than about 2.0 mm.

80. (New) The apparatus according to claim 68, wherein the apparatus is a probe having a diameter of less than about 1.0 mm.

81. (New) The apparatus according to claim 68, further comprising a further arrangement configured to modify at lest one property of the structure.

82. (New) The apparatus according to claim 81, wherein the further arrangement is at least one of an ultrasonic arrangement, a laser arrangement, a cauterizing tip, a set of retractable teeth forming a claw for grabbing an object, a suction tube or an arrangement for grasping a sample.

83. (New) The apparatus according to claim 68, further comprising a fluid displacement arrangement cooperative with the dispersive arrangement.

84. (New) The apparatus according to claim 68, further comprising a plurality of fibers each of which is configured to provide there through the electro-magnetic radiation, at least one first fiber of the fibers being configured to provide a first electro-magnetic radiation to the at least one section so as to obtain the information, and at least one second fiber of the fibers configured to provide a second electro-magnetic radiation to the at least one section so as to modify at least one property of the structure.

85. (New) The apparatus according to claim 84, wherein the first and second fibers are polished at different angles from one another.

86. (New) The apparatus according to claim 68, wherein the dispersive arrangement is further configured to at least partially overlap the at least one section with a plurality of electro-magnetic radiations, wherein one of the electro-magnetic radiations has a wavelength in a first range, and

another one of the electro-magnetic radiations has a wavelength in a second range, and wherein each of the first and second ranges are at least one element that is different from another one of the second ranges.

87. (New) The apparatus according to claim 68, wherein at least one of a property, an orientation or a position of the dispersive arrangement is capable of being modified to provide a further radiation to a particular location of the at least one section, and wherein the at least one property of the dispersed radiation is capable of being different from a property of the further radiation.

88. (New) The apparatus according to claim 68, wherein the lens and dispersive arrangements are sized so as to be encompassed within a needle having a gauge of about 20 or smaller.

89. (New) An apparatus for obtaining diagnostic information for a structure and modifying at least one property of at least one portion of the structure, comprising:

a plurality of fibers each of which is configured to provide there through the electro-magnetic radiation, at least one first fiber of the fibers being configured to provide a first electro-magnetic radiation to the at least one portion so as to obtain the information, and at least one second fiber of the fibers configured to provide a second electro-magnetic radiation to the at least one portion so as to modify the at least one property; and

a dispersive arrangement configured to receive the first and second electromagnetic radiations.

90. (New) The apparatus according to claim 89, wherein the electro-magnetic radiation is provided by at least one of a broadband source or a wavelength tuned source.

91. (New) The apparatus according to claim 89, wherein the dispersive arrangement contains at least one of a diffractive element or a refractive element.

92. (New) The apparatus according to claim 91, wherein the dispersive element is at least one of a fiber grating, a blazed grating, a binary, prism or a holographic lens grating.

93. (New) The apparatus according to claim 89, wherein the lens arrangement contains at least one of a gradient index lens, a reflective mirror lens grating combination or a diffractive lens.

94. (New) The apparatus according to claim 89, wherein the optical waveguide is an optical fiber.

95. (New) The apparatus according to claim 94, wherein the information is at least one of a two-dimensional image or a three dimensional image.

96. (New) The apparatus according to claim 95, wherein the at least one of the two-dimensional image or the three-dimensional image contains from about 300,000 to 1,000,000 resolvable points.

97. (New) The apparatus according to claim 95, wherein the at least one of the two-dimensional image or the three-dimensional image contains from about 150,000 to 300,000 resolvable points.

98. (New) The apparatus according to claim 95, wherein the at least one of the two-dimensional image or the three-dimensional image contains from about 100,000 to 150,000 resolvable points.

99. (New) The apparatus according to claim 89, wherein the apparatus is a probe having a diameter of less than about 2.0 mm.

100. (New) The apparatus according to claim 89, wherein the apparatus is a probe having a diameter of less than about 1.0 mm.

101. (New) The apparatus according to claim 89, further comprising a further arrangement configured to modify at lest one property of the structure.

102. (New) The apparatus according to claim 101, wherein the further arrangement is at least one of an ultrasonic arrangement, a laser arrangement, a cauterizing tip, a set of retractable teeth forming a claw for grabbing an object, a suction tube or an arrangement for grasping a sample.

103. (New) The apparatus according to claim 89, further comprising a fluid displacement arrangement cooperative with the dispersive arrangement.

104. (New) The apparatus according to claim 89, wherein at least one first fiber of the fibers is configured to provide a first electro-magnetic radiation to the at least one portion so as to obtain the information, and at least one second fiber of the fibers is configured to provide a second electro-magnetic radiation to the at least one portion so as to modify at least one property of the structure.

105. (New) The apparatus according to claim 89, wherein the dispersive arrangement is further configured to at least partially overlap the at least one portion with a plurality of electro-magnetic radiations, wherein one of the electro-magnetic radiations has a wavelength in a first range, and another one of the electro-magnetic radiations has a wavelength in a second range, and wherein each of the first and second ranges are at least one element that is different from another one of the second ranges.

106. (New) The apparatus according to claims 105, wherein the first and second electro-magnetic radiations overlap one another at the at least one portion.

107. (New) The apparatus according to claim 89, wherein at least one of a property, an orientation or a position of the dispersive arrangement is capable of being modified to provide a further radiation to a particular location of the at least one portion, and wherein the at least one property of the dispersed radiation is capable of being different from a property of the further radiation.

108. (New) The apparatus according to claim 89, further comprising a lens arrangement, wherein the lens and dispersive arrangements are sized so as to be encompassed within a needle having a gauge of about 20 or smaller.

109. (New) The apparatus according to claim 89, wherein the dispersive arrangement is further configured to forward a dispersed radiation thereof to at least one portion of the structure on a macroscopic scale.

110. (New) The apparatus according to claim 89, further comprising a plurality of probes, each of the probe capable of providing spatially encoded location information associated with the at least one portion.

111. (New) The apparatus according to claim 89, wherein the dispersive arrangement includes at least one of a fiber grating, a blazed grating, a binary, a prism or a holographic lens grating.

112. (New) The apparatus according to claim 111, further comprising a further grating which follows the dispersive arrangement and provided in a path of the electro-magnetic radiation.

113. (New) An apparatus for obtaining information for a structure, comprising:

a dispersive arrangement configured to receive a plurality of electro-magnetic radiations and forward a dispersed radiation of each of the electro-magnetic radiations to at least one portion of the structure and at least partially overlap the at least one portion, wherein one of the electro-magnetic radiations has a wavelength in a first range, and another one of the electro-magnetic radiations has a wavelength in a second range, and wherein each of the first and second ranges are at least one element that is different from another one of the second ranges.

114. (New) The apparatus according to claim 113, further comprising a plurality of optical fibers, wherein at least one first fiber of the fibers is configured to provide a first electro-magnetic radiation to the at least one portion so as to obtain the information, and at least one second fiber of the fibers is configured to provide a second electro-magnetic radiation to the at least one portion so as to modify at least one property of the structure.

115. (New) The apparatus according to claim 113, further comprising a plurality of fibers each of which is configured to provide there through the electro-magnetic radiation, at least one first fiber of the fibers being configured to provide a first electro-magnetic radiation to the at least one portion so as to obtain the information, and at least one second fiber of the fibers configured to provide a second electro-magnetic radiation to the at least one portion so as to modify at least one property of the structure.

116. (New) The apparatus according to claim 113, wherein at least one of a property, an orientation or a position of the dispersive arrangement is capable of being modified to provide a further radiation to a particular location of the at least one portion, and wherein the at least one property of the dispersed radiation is capable of being different from a property of the further radiation.

117. (New) The apparatus according to claim 113, further comprising a lens arrangement, wherein the lens and dispersive arrangements are sized so as to be encompassed within a needle having a gauge of about 20 or smaller.

118. (New) The apparatus according to claim 113, wherein the dispersive arrangement is further configured to forward the dispersed radiation thereof to at least one portion of the structure on a macroscopic scale.

119. (New) The apparatus according to claim 113, wherein the dispersive arrangement includes at least one of a fiber grating, a blazed grating, a binary, a prism or a holographic lens grating.

120. (New) The apparatus according to claim 119, further comprising a further grating which follows the dispersive arrangement and provided in a path of the electro-magnetic radiation.

121. (New) The apparatus according to claim 113, further comprising a plurality of fibers each of which is configured to provide there through the electro-magnetic radiations.

122. (New) The apparatus according to claim 121, wherein the electro-magnetic radiations provided from the structure are associated with the information.

123. (New) The apparatus according to claim 122, wherein the information is at least one of a color, a multispectral dataset or a hyperspectral dataset.

124. (New) The apparatus according to claim 123, wherein the at least one of the multispectral dataset or the hyperspectral dataset is at least one of a two-dimensional image, a three-dimensional image or a four-dimensional image.

125. (New) An apparatus for obtaining information for a structure, comprising:

a dispersive arrangement configured to receive at least one portion of an electro-magnetic radiation and forward a dispersed radiation thereof to a particular location on at least one portion of the structure,

wherein at least one of a property, an orientation or a position of the dispersive arrangement is capable of being modified to provide a further radiation to the particular location of the at least

one portion, and wherein at least one property of the dispersed radiation is capable of being different from a property of the further radiation.

126. (New) The apparatus according to claim 125, further comprising a plurality of optical fibers, wherein at least one first fiber of the fibers is configured to provide a first electro-magnetic radiation to the at least one portion so as to obtain the information, and at least one second fiber of the fibers is configured to provide a second electro-magnetic radiation to the at least one portion so as to modify at least one property of the structure.

127. (New) The apparatus according to claim 125, further comprising a plurality of fibers each of which is configured to provide there through the electro-magnetic radiation, at least one first fiber of the fibers being configured to provide a first electro-magnetic radiation to the at least one portion so as to obtain the information, and at least one second fiber of the fibers configured to provide a second electro-magnetic radiation to the at least one portion so as to modify at least one property of the structure.

128. (New) The apparatus according to claim 125, wherein the dispersive arrangement is further configured to at least partially overlap the at least one portion with a plurality of electro-magnetic radiations, wherein one of the electro-magnetic radiations has a wavelength in a first range, and another one of the electro-magnetic radiations has a wavelength in a second range, and wherein each of the first and second ranges are at least one element that is different from another one of the second ranges.

129. (New) The apparatus according to claim 125, further comprising a lens arrangement, wherein the lens and dispersive arrangements are sized so as to be encompassed within a needle having a gauge of about 20 or smaller.

130. (New) The apparatus according to claim 125, wherein the dispersive arrangement is further configured to forward the dispersed radiation thereof to at least one portion of the structure on a macroscopic scale.

131. (New) An apparatus for obtaining information for a structure, comprising:

a lens arrangement which is configured to provide there through electro-magnetic radiation; and

a dispersive arrangement configured to receive at least one portion of the electro-magnetic radiation and forward a dispersed radiation thereof to at least one portion, wherein the lens and dispersive arrangements are sized so as to be encompassed within a needle having a gauge of about 20 or smaller.

132. (New) The apparatus according to claim 131, further comprising a plurality of optical fibers, wherein at least one first fiber of the fibers is configured to provide a first electro-magnetic radiation to the at least one portion so as to obtain the information, and at least one second fiber of the fibers is configured to provide a second electro-magnetic radiation to the at least one portion so as to modify at least one property of the structure.

133. (New) The apparatus according to claim 131, further comprising a plurality of fibers each of which is configured to provide there through the electro-magnetic radiation, at least one first fiber of the fibers being configured to provide a first electro-magnetic radiation to the at least one portion so as to obtain the information, and at least one second fiber of the fibers configured to provide a second electro-magnetic radiation to the at least one portion so as to modify at least one property of the structure.

134. (New) The apparatus according to claim 131, wherein the dispersive arrangement is further configured to at least partially overlap the at least one portion with a plurality of electro-magnetic radiations, wherein one of the electro-magnetic radiations has a wavelength in a first range, and another one of the electro-magnetic radiations has a wavelength in a second range, and wherein each of the first and second ranges are at least one element that is different from another one of the second ranges.

135. (New) The apparatus according to claim 131, wherein at least one of a property, an orientation or a position of the dispersive arrangement is capable of being modified to provide a further radiation to a particular location of the at least one portion, and wherein the at least one property of the dispersed radiation is capable of being different from a property of the further radiation.

136. (New) The apparatus according to claim 131, wherein the dispersive arrangement is further configured to forward the dispersed radiation thereof to at least one portion of the structure on a macroscopic scale.